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Appendix 1 - PPM Specification

SERVICE:

Air Conditioning and Ventilation Plant 2026

CLIENT:

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A APPENDIX 1 – PLANNED PREVENTATIVE MAINTENANCE (PPM) SPECIFICATION

A1 GENERAL REQUIREMENTS

- A1.1 The Contractor shall be responsible for the planned preventative maintenance of all air-conditioning, chiller and mechanical ventilation systems listed in Appendix 5 (Asset List), including split systems, VRF/VRV units, fan-coil units, air-handling units (AHUs), chilled-water systems, and associated controls and components.
- A1.2 The Contractor shall maintain these systems in accordance with manufacturer's recommendations, current legislation, Approved Codes of Practice (ACOPs), applicable British Standards, the Health and Safety at Work etc. Act, the Electricity at Work Regulations, and the Fluorinated Greenhouse Gas (F-Gas) Regulations 2015 (as amended), together with any other statutory requirements or environmental obligations governing the safe management of refrigerants.
- A1.3 Where manufacturer's instructions are unavailable, this specification represents the minimum acceptable standard.
- A1.4 All work shall be undertaken by suitably qualified, competent and accredited engineers, including F-Gas-certified personnel and REFCOM-registered organisations where required.

A2 AIR-CONDITIONING SYSTEMS

A2.1 Annually:

- Check compressor for undue noise or vibration.
- Check discharge and suction pressure and superheat under full-load conditions.
- Check for symptoms of wet operation or excessive superheat.
- Refrigerant management: inspect receiver and liquid-line sight glass; record levels; report any shortfall suggesting leakage.
- Leak-test accessible pipework and fittings (including bolted and flared joints, sight-glass glands, and pressure-relief vents).
- Ensure all removed refrigerant is recovered — not vented — and handled only by REFCOM-registered engineers.
- Inspect and clean condenser and evaporator fins using dry nitrogen or compressed air (no CFC solvents).
- Check all fans, motors and damper drives; lubricate bearings as required.
- Inspect fan-guard covers and fixings.
- Check drive belts for condition and tension; adjust or replace as necessary.
- Tighten bolts, screws and mountings.
- Check evaporator trays and drains for blockage; flush and disinfect.
- Test compressor capacity control and unloader valves for correct operation.
- Check motor current against commissioning data.
- Inspect pipework for vibration and adequate support.
- Inspect and replace filters as necessary.
- Inspect and repair insulation as required.
- Clean compressor and condensing unit surfaces.
- Check for damage to flexible conduits and electrical connections; tighten terminals; inspect for overheating or corrosion.

- Confirm system operation matches design parameters (start/stop, capacity regulation).
- Record on/off temperatures and pressures.

A3 AIR HANDLING UNITS (AHUs)

A3.1 Six-Monthly:

- Check for undue noise and vibration.
- Check condition of flexible connections.
- Inspect and disinfect condensate trays and drains.
- Check belt tension and alignment; replace if worn.
- Access filter sections; inspect media and record pressure drop.
- Renew filter media or clean re-usables as indicated.
- Ensure edges are sealed and dispose of waste in accordance with regulations.
- Check operation of dampers and guide vanes.
- Inspect heat-transfer coils for debris or damage.
- Ensure guards are secure and covers refitted with new gaskets if required.

A3.2 Annually:

- Repeat six-monthly tasks.
- Thoroughly clean filter housings and adjacent ductwork.
- Check frost protection systems and heating coils for correct operation.
- Vent air from heater-coil headers and verify valve operation.
- Lubricate all dampers, linkages and pivot points.
- Inspect anti-vibration mounts and couplings.
- Check motor bearings and measure full-load current.
- Verify operation of electrical controls and safety interlocks.
- Inspect for corrosion and air leaks; clean interior surfaces.

A4 CHILLER UNITS

A4.1 Six-Monthly:

- Check operating status and refrigeration circuits for pressures and superheat.
- Inspect alarms and indicator lights.
- Compare display readings with master gauges and report discrepancies.
- Leak-test all circuits and inspect expansion valves.
- Check supply and return water temperatures; verify glycol concentration and flow rate.
- Inspect pumps and pipework for leaks and vibration.
- Test standby circuits and alarms.
- Inspect electrical panels for wear and overheating.
- Check insulation condition and repair as necessary.

A4.2 Annually:

- Repeat six-monthly tasks.
- Tighten all terminals and inspect for signs of overheating.
- Test electrical insulation integrity.
- Test safety cut-outs (high/low pressure, antifreeze and temperature switches).
- Check pump strainers and record pressure drops across heat exchangers.

A4.3 Work on refrigerant systems must only be carried out by engineers holding valid F-Gas certification and working for a REFCOM-registered organisation.

A5 DOCUMENTATION AND REPORTING

A5.1 Provide a written service report for each visit detailing findings, measurements, and any defects identified.

A5.2 Record F-Gas usage and refrigerant handling activities in accordance with legal requirements.

A5.3 Highlight any non-conformances with manufacturer specifications or health and safety regulations.

A5.4 Ensure defects identified as safety-critical are immediately reported to the University's authorised representative.